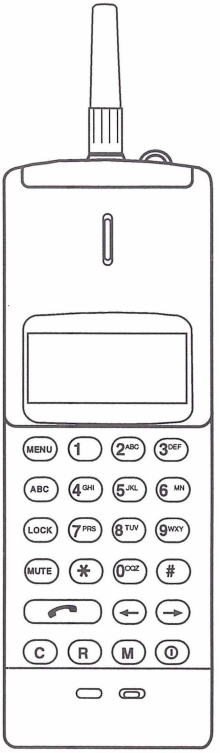
THF-2

NOKIA

MOBILE PHONES



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The information contained in this user's guide was written for NMT 450 mobile phone type THF-2.

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Issue Number 1

USER'S GUIDE

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IMPORTANT INFORMATION

1. Traffic Safety

We recommend that you do not use the phone when you are driving a vehicle. Use the handsfree facility or park safely and then make your call. Remember, road safety always comes first!

2. Operating Environment

The radio frequency of your cellular phone may interfere with other nearby electronic devices, for example, those in hospitals. Please take this into consideration when you have your cellular phone switched on. Remember to follow any special regulations in force in the area and always switch off your phone whenever it is forbidden to use it, or when it may cause interference or danger.

Do not use your portable or transportable cellular phone if the distance between the antenna and a pacemaker or a similar electronic device is less than 50 cm (20").

Never use your cellular phone in an aircraft. Switch your phone off before boarding. Failure to observe this instruction may lead to suspension or denial of cellular telephone services to the offender, or legal action or both.

Do not operate the cellular phone in areas where explosives are being used. Observe and take notice of warnings prohibiting radio transmission.

Users are advised to turn off the phone at a refuelling point.

Electronic fuel injection systems, electronic anti-skid braking systems, electronic cruise control systems, and other electronic systems can malfunction because of lack of protection from radio signals.

3. Recommended Distance from a Radio Transmitter to the Handportable Phone.

The transmitting power level of this phone is of an order gener- ally considered sufficient and up to the requirements of the radio telephone network, where the phone is operated.

4. Reliability of Connection in Case of Emergency

Remember that the service and emergency numbers in countries using an NMT network differ from one country to another. You can obtain these numbers from the local network operator.

Especially when using your phone for emergency calls in an uneven terrain or close to large buildigs please note that the operating range of the base stations can be affected and that may impair radio communication quality. Radio communication

quality can be improved by moving to another location where the obstacle no longer comes between the phone and the base station.

When making an emergency call, always remember to give your name and mobile telephone number as well as the location of the accident, as accurately as possible.

Remember that your mobile phone may be the only means of communication at the scene of an accident - don't cut off the call until given permission to do so.

5. Additional Information

Do not expose the phone to moisture.

Do not attempt to open the phone. Non-expert handling of the phone may damage it and may invalidate the warranty.

Use only the charger specified in the instructions to recharge the battery.

Use the battery only for the purpose intended.

Take good care of your phone. Avoid knocks and other sudden shocks.

Keep the phone out of small childrens reach.

Check regularly that, when installed in a vehicle, the cellular phone equipment is properly installed.

In a vehicle, when placing the handportable in its holder make sure that it is firmly in place.

About This Guide

The operation of the phone requires successive keypresses; two keys are never to be pressed simultaneously.

When starting a function like **R** (recall) (or **MENU** - menu, **M** - store, **ABC** - alpha mode) the timeout period is 10 seconds. This means that unless there is a key pressed before 10 seconds is elapsed you exit the function automatically.

1. GETTING STARTED

CHARGING A NEW BATTERY

Before you can use your phone you must fully charge the battery.

To install the battery in the phone:

To install the battery pack line up the top edge of the battery with the white line on the handportable and then push the battery pack until you hear a click.

Make sure the battery is properly fastened.

A new battery should be charged for at least 16 hours before being used for the first time.

Follow the instructions given in 'Recharging the Battery'.

SWITCHING ON

Press ⏻.
The phone will carry out a short self-test, briefly displaying its number, or name associated with the number (operator, dealer or your own name).

When the appropriate country code, *ON* and *SERV* indicators appear on the display, the phone is ready for use, ⏻ indicates that the phone is switched on.

SERV shows that the cellular service is available in your area; if it does not appear, you are outside the service area and the network cannot serve you.

ROAM appears when the NMT network no longer has contact with your phone. Press to reregister the phone on to the network, or try to make a call.

COUNTRY CODE indicates in which country the phone will operate.

When you have to change the code, see 'Changing the Country Code'.

A cellular phone can make and receive calls only when it is switched on.

SWITCHING OFF

Press ⏻ and hold for half a second.

2. BASIC FUNCTIONS

MAKING A CALL

Key in the number (include the area code, even if you're making a local call).

If you make a mistake, you can delete the last number by pressing **C**; or clear the whole display, by pressing and holding **C** for half a second. (You can also use **C** to cancel other keystrokes.)

Press . The *CALL* indicator will appear on the display. When the number clears from the display and a tone is heard, the phone has transmitted the number.

Lift the phone to your ear, and wait until your call is answered - then speak.

When you have finished the call, press .If the message *LOCKED* appears on the display your phone has been locked (see 'Locking the Phone'). When the phone is locked you can make only emergency calls and calls to the number in memory locations 95, 96 and 97.

To redial the last called number: Press twice.

RECEIVING A CALL

When there is an incoming call, the ringing tone sounds and the *CALL* indicator flashes on the display. If the ringing tone has been switched off - the SILENT SERVICE feature has been selected for privacy or other reasons - the keypad and display lights will flash instead and only a short beep will be given. (See 'Ringing Volume').

Press ANY KEY (except ⏻ and **MENU**) and lift the phone to your ear.

When you have finished speaking, press 📞.

If you don't answer the call, the *CALL* indicator will remain flashing on the display (showing that someone has tried to phone you). Press 📞 to clear the indicator. When the call is on the *CALL* indicator will remain on the display.

ANY KEY ANSWERING

The phone is equipped with a permanent any key answer option (press any key except ⏻ or **MENU** to answer a call). If you should receive an incoming call at the same time as keying in a number, the any key answering feature becomes active after you hear the first ringing tone.

Any key answering is not active when the keyguard is turned on.

SIGNAL STRENGTH

The quality of your call depends on the strength of the cellular signal in your area. The phone displays current field strength as a series of bars at the left hand side of its display screen - the more bars, the better the signal in your area.

If the signal is poor you can try moving the phone slightly to improve reception. If you are using the phone in a building, you may find that reception is better near a window.

BOOSTER FEATURE

When you are using your phone in the area where the cellular signal is poor you can use the additional transmit power the phone provides. After dialling the number press **MENU** + to activate the feature. The call is ended in the usual way by pressing .

Note! When using this feature the total talktime is shorter due to higher current consumption.

VOLUME KEYS

The volume of the earpiece can only be controlled during a call.

Use → to increase and ← to decrease the volume level. The volume level is shown on the display. *VOLUME 1* indicates the lowest and *VOLUME 5* the highest volume level.

LAST NUMBER REDIAL

The phone automatically stores the last five numbers (and associated names) that you have called. The numbers previously stored are overwritten by the new ones. The last called number replaces the oldest stored one.

To scroll the list of the five last called numbers:

1) Press **O R** or **0 #** or (in HF operation).

The last called number appears.

2) Press ← or → to scroll the list of the other four last called numbers until you find the desired number.

3) Press to make a call to the number.

NOTE: You can select in menu 10 whether you want the last called numbers to be cleared from memory in power-off or stored in memory. If you set *CLEAR LAST ON*, the last called numbers are automatically cleared from memory when the phone is switched off.

MUTE KEY

The mute key mutes the phone's microphone and gives the opportunity to have a private conversation during a call. By pressing the **MUTE** key the second time unmutes the microphone.

The *MUTED* message is removed and the call can be continued in the usual way.

THE MEMORY

The phone has 97 standard memory locations which allow you to store information in the following combinations:

Phone numbers of up to 32 digits

Names of up to 16 letters together with numbers of up to 32 digits

Only numbers or letters can be displayed at a time. You can switch between them by pressing **ABC**.

In addition, memory location 0 is reserved for the last called numbers. Memory locations 98 and 99 store the phone's own number. Memory location 00 is so called scratchpad memory (see 'Scratchpad Memory') where you can store information temporarily during a call.

When the phone is locked, only numbers in memory locations 95, 96 and 97 , and the local emergency number can be called.

NOTE! In case you are storing long names it may happen that there is not memory space enough to store all 97 names associated with telephone numbers. For this reason it is advisable to use abbreviations for the names.

KEYING IN NAMES

Press **ABC**. The *ALPHA* indicator will appear on the display to show that the phone is in alpha mode and that when you press a key, letters will appear instead of numbers.

Select the key labelled with the letter you want. Press it once to obtain the first letter, twice (before the *ALPHA* indicator flashes) to obtain the second, and three times (before the *ABC* indicator flashes) to obtain the third. If you miss the letter you want, just keep pressing.

Select further letters in the same way. If you want the same letter twice, either select it as above, wait until the *ALPHA* indicator flashes and select it again; or select the letter, press ✱, then select it again. Note that in *ALPHA* mode the **#** key gives a space.

To leave alpha mode when you have finished keying in the name, press **ABC** again. Now you can key in numbers again. The alpha mode is cleared automatically after 10 seconds if there has been no user action. To get the alpha display back simply press **ABC** again.

EDITING NAMES OR NUMBERS

If you make a mistake whilst keying in a name or a number, you can correct it as follows:

Press **C** to delete the last number or digit. Press and hold **C** to clear the whole display. Note that this clears both the name and the number entered. Alternatively you can press **# #** (in numeric mode).

DISPLAYING 'HIDDEN' NUMBERS

The phone can display up to 16 digits. If you key in more than this, the first digits will disappear off the side of the display.

If you want to check these hidden digits, press and hold **R** and they will appear on the display. When you release the key, the original display will reappear.

Remember to clear the whole display (press and hold **C**) after having displayed a long number if you want to use the **R** key for recalling information.

STORING INFORMATION

Key in the area code and number, and, (in ALPHA mode), the name (or first name and then number).

Press **M**.

The phone will ask you to specify a memory location number (*STORE*).

Press **M** if you want the information stored in the first available memory location, just press **M**.

Otherwise, key in a memory location number.

The message *STORED* will be shown on the display, confirming that the information has been stored in the memory location specified in the left corner of the upper display row.

If you try to store information in a memory location that is already being used, the phone will display the memory location number and the *REPLACE CONTENT?* message.

If you want to replace the existing information, press **M** (within 8 seconds).

If you do not want to delete the existing information, either press **C** or wait until the message *STORE NOT DONE* appears.

The information you tried to store will then reappear on the display, and you can store it in a different memory location, as described above.

STORING INFORMATION WITH THE NMT STANDARD METHOD

To store a telephone number in a particular memory location using the NMT standard method:

Press ✱. Key in a memory location number. Press ✱. Key in the telephone number. Press # ✱.

CLEARING INFORMATION

Press and hold **C** to clear the display. Press **M**.

The phone will ask you to specify a memory location number (*STORE*).

Key in the number of the memory location you want to clear.

The message *REPLACE CONTENT?* will appear. Press **M**.

The message *STORED* and the memory location number will be displayed briefly, confirming that the memory location has been cleared.

CLEARING INFORMATION WITH THE NMT STANDARD METHOD

Press **#**. Key in the memory location number. Press **# ✱** .

RECALLING INFORMATION BY MEMORY LOCATION NUMBER

Press **R**. The phone asks you to specify the memory location (*RECALL*). (If you have a call going on, you have to press **MENU R**).

Key in the memory location number, e.g. 2. The telephone number stored will appear on the display.

Press **ABC** if you want to check the name stored against the number. (If no name was stored with the number, the display will be blank). Press **ABC** again if you want to return to the number display.

Call the number by pressing . (It does not matter whether the number or the name is displayed).

Remember: during a call the **R** key is reserved for three-way calling feature. Use **MENU R** or **#** to recall from memory during a call.

RECALLING INFORMATION WITH THE NMT STANDARD METHOD

Key in the memory location number. Press #.
Press to call the number.

RECALLING INFORMATION BY NAME

Press **ABC**.
Key in the name, or the first letters of the name that you want to recall (see 'Keying in Names').

Press **R**. (If you have a call going on, you have to press **MENU R**) The name will appear on the display.

If you want to check the phone number, press **ABC** again.

Call the number by pressing .(It does not matter whether the name or the number is displayed).

SCANNING FOR A NUMBER

To scan the entire memory, use ← or → to display the contents of the memory locations in use.

If you have just recalled a memory location by number, the scanning will start from that memory location.

When you find the number you want, press to make the call.

SCANNING FOR A NAME

Press **ABC**.

Press → to display the first and ← to display the last name in alphabetic order. To display the other stored names, press → or ← until you find the name you are looking for.

If you want to make the search faster just key in the first letter of the name you are looking for and then press **R**. The first name beginning with this letter will appear on the display. To scan forward press → (within 10 seconds) to display the next, and so on.

If you want to check the phone number stored against a name, press **ABC**. Press it again, then use ← or → to carry on scanning through the names.

When you find the name you want, make the call by pressing .

NOTE! The number of the memory location is shown only when scanning for numbers (not for names).

OWN NUMBER

To check the number of your phone:

Press **99** (memory location where the phone's number is stored).

Press **R**. Or alternatively: Press **R 99**.

NOTE! Phone's own number is also stored in memory location 98, but the first number indicates the phone's so called home country code eg. 8123456, 8 country code, 123456 phone number

THE SCRATCHPAD MEMORY

In addition to its 97 permanent memory locations, the phone has one shortterm memory location (00), where a telephone number keyed in during a call is temporarily stored. The number is cleared from memory in power-off.

Key in the area code and number (during a call).

The phone will automatically store the number in the scratchpad memory location when you end the call.

Any number previously stored in scratchpad memory will be lost.

To recall the number, press **0 0** and then **R** or **#**.
To call the number, press .

To move a number from the scratchpad memory location to a permanent memory location, recall it, then store it as described in 'Storing Information'.

(When the location 00 is not used, the phone's SIS security reference code can be checked there. The reference code is used by the NMT network to register your phone.)

3. MENU FACILITY

The menu allows you to check and change the settings for certain functions, eg. whether they are currently switched on or off. Although stepping through the menu to enter a function may take longer than using the alternative shortcut (see below), it is often easier to remember.

1) Press **MENU**.

2) Use either ← or → to step forwards or backwards through the list of functions until you find the one you want.

3) Press **M**.

4) Use the ← or → to change the setting of the function. The current setting is displayed first.

5) Press **M** to store the new setting in memory (the one which is displayed).

6) Use the **C** key to quit the menu function if you do not want to change any settings.

The following menu functions can be entered either by using the menu method (press **MENU**, use ← or → and press **M**) or a shortcut (press **MENU** and a function number):

Menu function	Shortcut	Description
LOCK PHONE	**MENU 0**	lock and unlock phone
COUNTRY SELECT	**MENU 1**	select approriate country code
RINGING TYPE	**MENU 2**	select type of ringing tone
CALL TIMERS	**MENU 3**	display lenght of call(s):timer
LIGHTS ON OFF	**MENU 4**	set lights off; or off after 10 sec
KEYPAD TONES	**MENU 5**	switch keypad tones on/off
RINGING VOLUME	**MENU 6**	select volume of ringing tone
CHANGE LOCKCODE	**MENU 7**	change lock code phone
MFT SERVICE	**MENU 8**	send MFT tones
ACCESSORY MENU	**MENU 9**	control the accessories connected to the phone

Note that when you enter a function by its short-cut, eg. **MENU 7**, the name of the menu function (CHANGE LOCKCODE) will not be shown.

Note that when you enter function 1 by pressing **MENU 1**, you have to wait a few seconds.

The following menu functions can be entered only by a shortcut (press **MENU** and a function number):

Menu function	Shortcut	Description
Clearing the last called number	**MENU 10**	set the last called numbers to be cleared or retained in power-off
Data mode	**MENU 11**	set the phone in data mode
Charging	**MENU 12**	set the charging on/off
Sleep mode	**MENU 13**	set low power 'sleep mode' on/off
Keyguard	**MENU ∗**	lock/unlock the keypad
or	**MENU LOCK**	

Note that the names of the functions accessible only by a shortcut are not shown on the display. For example, if you press **MENU 10**, you will see the current setting of the function (not 'clearing the last called numbers').

To change the setting, press ← or → to change the setting on the display and then **M** to store the new setting.

MENU FUNCTIONS

Only shortcuts for the menu functions are presented below. Obviously, you can also use the menu method (press **MENU**), scroll the list and

enter the desired function by **M**). Note that you can use both the shortcut and the menu method only in functions 0 to 9.

LOCKING/UNLOCKING THE PHONE

The phone has an easy-to-use security system. It can be locked by using a four-figure lock code to prevent unauthorised use.If you forget your lock code, you can change it in menu 7.

Note: to change the lock code you have to know the security code supplied by your dealer.

When the phone is locked, only emergency calls and calls to to the numbers in memory locations 95, 96 and 97 can be made, but all calls can be received. Access to memory is also prevented.

Keep in mind that the countries using NMT networks have different emergency numbers. Check the number with the local system provider.

To lock the phone: Press **LOCK** or (**MENU 0**).

The phone will ask you to key in the lock code (*LOCKCODE?*).

Key in the four-digit code. It will appear on the display as a series of stars. Press **M**.

If you keyed in the correct code, *LOCKED* will appear on the display and remain there to remind you that the phone is locked. If you keyed in a

wrong code, the message *CODE ERROR* appears. To exit the function, wait a moment or press **C**.

Unlocking the phone is carried out in the same way. When the lock is cleared the message *UNLOCKED* will appear briefly on the display.

CHANGING THE COUNTRY CODE

Note that this feature may not be available in all NMT countries.

If you go to another NMT country and wish to use your phone there you must select the correct country code (*SF, S, N, DK, etc.).*

To change the country code: Press **MENU 1**.

The phone will display the code it is currently using.

Press ← or → to select the new code from the list. Press **M** to confirm the setting.

RINGING TONE TYPE

The phone is provided with 1 standard and 4 optional ringing tones. To select the tone you like best:

Press **MENU 2**. Press ← or → to select the type you prefer. Each time you can hear a short ringing sample. Press **M** to confirm the setting.

LENGTH OF YOUR CALLS

To check the duration of your outgoing calls:

Press **MENU 3**.

The phone will show the duration of the last call, in hours, minutes and seconds (*LAST .. :.. :..*).

Press → to display the same information for all the calls you have made (*TOTAL*) (excepting the current call). The total duration is displayed in hours, minutes and seconds.

Press **C** to exit the function.

RESETTING THE CALL TIMERS

To reset the call duration timers to zero:

Press **MENU 3** to activate the 'Call timers' function. Use ← or → to step through the list to RESET TIMERS. Press **M**. The phone will ask for the five-digit security code (*SECURITY*). supplied for your phone. Key in the security code. Press **M**.

The phone will display the *TIMERS CLEARED* message, confirming that the timer has been set to zero.

SETTING THE LIGHTS

The phone's keypad and display are fitted with lights to make them easy to read. When the lights are ON - phone used as a handportable phone or connected to a charger: lights remain on for 10 seconds after you have pressed a key; - phone connected to the car installation kit: lights are continuously on.

When the lights are switched OFF - phone used as a handportable phone or connected to a charger: lights are continuously off; phone connected to the car installation kit: lights remain on for 10 seconds after you have pressed a key.

To adjust the lights: Press **MENU 4**.Use ← or → to select *LIGHTS ON* or *LIGHTS OFF*.

Press **M** to confirm the setting.

KEY TONES

You hear a key tone each time you press a key. To turn the key tones on or off: Press **MENU 5**.

Use ← or → to switch the key tones *TONES ON* or *TONES OFF*. The current setting is displayed first. Press **M** to confirm the setting.

Note that when the key tones are switched off, DTMF tones can still be sent. Also note that when you have switched off the ringing tone (silent service) no key tones will be heard either.

When the phone is connected to a car kit: You have four volume levels *(VOLUME LEVEL 1, 2, 3,* and *TONES OFF)* to choose from. Follow the same steps as above.

RINGING VOLUME

The ringing tone sounds when there is an incoming call.

To select the tone volume: Press **MENU 6**.

Use ← or → to select *RINGING HIGH, LOW* or *SILENT SERVICE* for the ringing volume. The current setting is displayed first. Press **M**.

If you selected *SILENT SERVICE*, the message *SLNT* is displayed in standby mode, to remind you that you will not hear a ringing tone. Instead, the phone will give only a short beep and flash its display and keypad lights when a call is coming in. Note also that all the phone's other tones are turned off.

When the phone is connected to a car kit: You have six ringing tone volume levels to choose from (*RINGING LEVEL 1, 2, 3, 4* and *5*, and *SILENT SERVICE*). To select the level you prefer, follow the same steps as above.

CHANGING THE LOCK CODE

To change the lock code of your phone: Press **MENU 7**.

The phone asks you to key in the five-digit security code (*SECURITY?*).

Key in the security code. If you keyed in an incorrect code, the *CODE ERROR* message will appear. After you have given the correct security code, the phone asks you to key in the new lock code (*NEW LOCK CODE?*).

Key in the new four-digit lock code. The code may contain numeric digits only: other characters (eg. *, #) are not allowed. Press **M**. The message *STORED* will appear to confirm that the new lock code has been set.

DTMF TRANSMISSION

You can transmit numeric information as a series of tones, for example, to interrogate your answering machine.

You can either send DTMF tones through the phone's DTMF tone generator, or you can use the MFT service of the NMT system. Sending DTMF tones by the MFT service is more reliable in poor transmission conditions.

You have four alternative ways to send DTMF tones:

I Manual DTMF Dialling

Make the call in the usual way (see 'Making a Call'). Key in numbers on the display. Each number is directly sent as a DTMF tone. The length of the tone depends on how long you press the key.

II Automatic DTMF Dialling

This feature allows you to recall a number from a memory location and send it as a complete number. Make the call in the usual way.

Press **MENU R** to recall the number from a memory location. Press **MENU**+ to activate the phone's own DTMF generator. The number stored in the memory location is automatically sent as DTMF tones (long tones).

III Manual DTMF Dialling through MFT Service

Make the call in the usual way. Press **MENU 8** to select the MFT service. The *MFT SERVICE* message is displayed, and the *MFT* indicator will appear.

Key in the number on the display. Each number is directly sent as a DTMF tone. The indicator flashes as each tone is sent. Press **MENU** to switch off the MFT service.

IV Automatic DTMF Transmission through MFT Service

This feature allows you to recall a number from a memory location and send it as a complete number. Make the call in the usual way.

Press **MENU R** to recall the number from a memory location.

Press **MENU 8** to activate the MFT service. The number stored in the memory location is automatically sent as DTMF tones (*MFT* flashes during transmission).

If the *MFT* indicator should remain on after the transmission, use the **MENU** key to return to normal operation. Note! You cannot speak into the handportable when the MFT service is on.

Also note that even if the keytones are turned off the DTMF tones can still be sent. Placing a Pause between DTMF Tone Strings.

Press **MENU #** to place a pause of 2.5 seconds (shown as *p* on the display) between DTMF tone strings (eg. your answering machine may require a pause between its password and the code for "play messages").

ACCESSORY MENU

From this menu you can control the accessories connected to your phone. To enter the accessory menu: Press **MENU 9**.

If no accessories are connected to the phone, the message *NONE PRESENT* is shown.

If you have any number of accessories connected to the phone, the name of the first accessory is shown.

If you have several accessories, scroll the accessory list by ← and → until you find the accessory whose setting you wish to change.

Press **M** to enter the respective accessory menu and scroll the setting options by ← and →. Store the new setting by pressing **M**.

For menus and messages generated by accessories, refer to the user's guides delivered with the accessory devices.

CLEARING THE LAST CALLED NUMBERS

To set the last called numbers to be automatically cleared or retained in memory in power-off:

Press **MENU 10**. Select *CLEAR LAST ON or CLEAR LAST OFF*. Press **M** to confirm the setting.

DATA MODE

Not only can your phone make and receive voice calls but it can, when connected to a car kit and a teleadapter, send and receive data, too.

To set the phone in data mode: Press **MENU 11**.

If you try to enter data mode while you have no call going on, the message *NO CALL ACTIVE* appears.

For more information on sending and receiving data, refer to the user's guide delivered with any data adapters (eg. FDP-1) supplied by this phone's manufacturer.

CHARGING ON/OFF

If necessary you can switch charging off when using your phone in the car to get the maximum battery capacity. To switch charging off press **MENU 12**. Set charging off by pressing → or ←. Press **M** to confirm the setting.

This setting is valid as long as the phone's power is on. When the phone is switched off or the battery's capacity has decreased to the shutdown limit the setting changes automatically to the CHARGING ON state. This means that charging starts automatically just before the shutdown limit if the phone has been connected to the charger or to the mounting holder.

SETTING THE LOW POWER SLEEP MODE

You can set your phone to low current consumption mode or sleep mode in order to economize the battery charge.

In sleep mode the battery consumption falls automatically whenever the NMT network loses contact with your phone and cannot serve you anymore (eg. in long tunnels). In sleep mode, the phone 'wakes up' every 20 seconds to check if the network is available. If you are still outside the network, a new sleep period is started. When the network can serve you again (the *SERV* indicator appears on the display) the phone 'wakes up' and returns to the normal power level.

At any time, you can 'wake up' the phone by pressing a key. Activated sleep mode feature may save the battery charge considerably when attending places where the network service is not at its best, eg. underground parking houses, cellars, remote areas in the countryside, etc.

To activate and de-activate sleep mode: Press **MENU 13**. Set *SLEEP ON* or *OFF* by pressing → or ← . Press **M** to confirm the setting.

KEYGUARD

The phone is equipped with a handy keyguard function which, when activated, prevents accidental keypresses eg. when the phone is in your pocket. When the keyguard function is activated, no keybeeps are heard and no keypresses are accepted, except emergency numbers.

To activate the keyguard function: Press **MENU LOCK** or **MENU∗.**

The *KEYGUARD ACTIVE* message appears on the display. If activation takes place during a call, the message is shown for a while and the keyguarding begins just after the call is ended. When the keyguard is active the *KEYGUARD ACTIVE* message is shown. When any key is pressed the *PRESS MENU* * message is shown.

If you receive a call the phone starts to ring and the blinking CALL indicator is shown. To answer the call, the keyguard being active, press (anykey answer is disabled). During a call the keyguard is not active and you can operate the phone as usual.

If the incoming call is not answered the flashing CALL indicator will remain on the display.

Calls to emergency numbers can be made as usual. After the emergency call the keyguard becomes active again. To deactivate the keyguard: Press **MENU LOCK** or **MENU∗**.

The *KEYGUARD OFF* message appears and the phone starts to operate in the usual way.

In power-off the keyguard function deactivates itself.

CALLING HOME FROM ABROAD

This function allows you to automatically add international prefix and country codes to a number when you are in another NMT country and wish to call home and use numbers stored in memory. Operating in this way you can use the numbers in memory even when you are abroad.

Before you can use this feature you have to store the prefix in memory (see below).

Press **R** to recall a number from memory (or key in the telephone number including country's internal area code) you wish to call.

Press **MENU R**.

The message *PREFIX* will ask you to key in the memory location where you have stored the prefix. Key in the memory location where the prefix is stored, eg. 90.

The phone adds the prefix in front of the number on the display. Press to make the call.

STORING AN INTERNATIONAL PREFIX IN MEMORY

Remember that the prefix for international calls is different in each NMT country. If you store the Finnish prefix for interna- tional calls (i.e. 990) it cannot be used when calling from Norway (095). If you wish to store more international prefixes you have to do so in another memory location. Key in the prefix for international calls of the country from where you most often make calls to your home country. Eg. if you wish to make international calls from Sweden, key in 009.

Key in the country code (for your home country). Eg. if you wish to call the Finnish numbers in memory, key in 358.

Key in ✱ , if a number must be deleted from telephone numbers stored in memory and which you wish to use. The number of stars in the sequence indicates how many digits from the beginning of the country's internal area code has to be deleted. Store the prefix (eg. 009 35 8 ✱ in the desired memory location, press eg. 90). From now on you can use the stored prefix when making calls to your home country, see instructions above.

CALL FORWARDING

Call transfer is an NMT system feature, contact your system provider for further information. This feature allows you to transfer incoming calls to another telephone number.

REGISTER RECALL FUNCTION

The NMT network may offer a service called Register Recall (three-way calling or conference call) a feature with which you can activate a second call while one is already on and switch between the calls with the **R** key.

Remember: the **R** key enables three-way calling function only during a call.

For further information, contact your local system provider.

4. USING THE BATTERIES

The phone is powered by a rechargeable battery.

If left unused, a fully charged battery will discharge itself in about a month.

When battery is not in use, store it uncharged in a cool, dark and dry place.

Charge the battery at a temperature below +40°C. Charging will not take place at a higher temperature but might damage the battery.

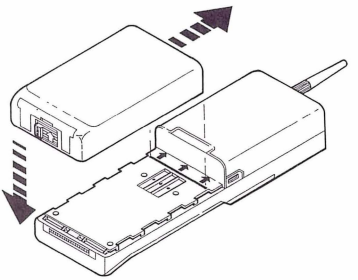
The battery is a sealed unit with no serviceable parts. Do not attempt to open the case.

Remember! Do not dispose of the battery in a fire.

INSTALLING THE BATTERY

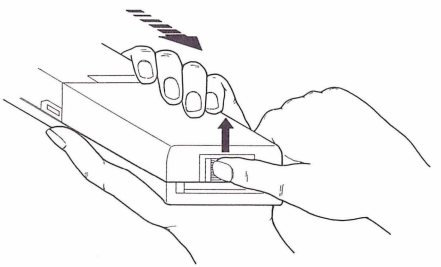
Before you can use your phone you must charge the battery.

To install :



To install the battery pack line up the top edge of the battery with the white line on the handportable and then push the battery pack until you hear a click. Make sure the battery is properly fastened.

To remove:



Ease the locking catch on the base of the battery pack backwards (see the arrow) and slide the battery away from the receiver and lift it off.Remember to always turn the power off before removing the battery.

BATTERY CHARGE INDICATION

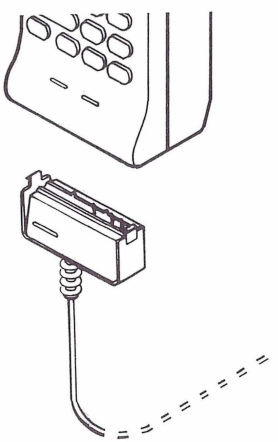
The bars at the right hand side of the display screen indicate battery charge rate (voltage) - the more bars, the higher the battery charge. When the charge falls under 10%, the phone displays the *BATTERY LOW* warning message and gives a warning tone. The warning will be repeated.

When the battery is fully discharged, a tone is given, the message *RECHARGE BATTERY* is displayed and the phone turns off.

RECHARGING THE BATTERY

Connect the AC travel charger (ACH-3EF) to the base of the phone and plug it into the mains.

NOTE: The small pip on the connector must face the front of the phone.



Whilst charging is in progress, the battery charge indicator bars on the display will scroll. When the battery is fully charged, the scrolling will stop and all bars are displayed.

A new battery should be charged for at least 16 hours before being used for the first time. Always fully charge the battery.

Recharging the standard battery (BBH-6S) with the AC travel charger (ACH-3EF) takes about 10 hours and the extended (BTH-4) battery 12 hours.

You can use the phone during recharging (not when the battery is totally exhausted), but the charging process will be interrupted for the duration of the call.

Batteries last longer and perform better if allowed to discharge fully at least once a week. You can do this by leaving the phone switched on until the message *RECHARGE BATTERY* is displayed and the phone turns off.

Then switch on the phone again and start recharging the battery when *RECHARGE BATTERY* reappears. An incompletely discharged battery will have a reduced capacity.

You can also use the charging *ON/OFF MENU* to switch off eg. in car use

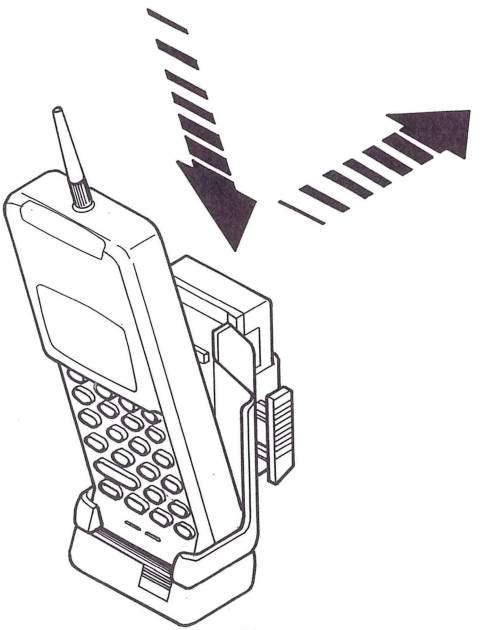
If the battery temperature is above 40°C (104°F) or below 5°C (41°F) phone will not recharge its battery.

A desktop charging stand, two travel chargers and a cigarette lighter charger are available for the phone, see 'Accessories'.

5. ACCESSORIES

CAR INSTALLATION KIT MOUNTING HOLDER (MCH-7)

Your vehicle can be fitted with a special holder which connects the phone via a junction box (HFJ-2) to the HF-kit, the mobile antenna and the accessory devices. The holder is also provided with a charging facility which allows a battery to be charged automatically whenever you place the phone in the holder. Slide the phone in the holder and push it backwards until it is locked firmly in place. To release the phone, press the latche on the right side of the holder.



HANDSET (HSE-1 / HSN-4)

You can use the handset when the phone is placed in the holder. When the handset is connected, it is used for all keystrokes. Keystrokes from the phone's keypad are ignored and the phone's display is blank.

The display indicators and keypad functions of the handset are fairly similar to those of the mobile phone.

The keypad printings vary slightly from the ones used in handportable phone, see keypad description in 'Appendix'. To use the handset, you can either have the phone switched on or off.

If you place the phone in the holder with power switched on, the handset switches itself on.

If you place the phone in the holder with the power switched off, to switch the handset on: Press ⏻ of the handset.

To switch the phone off: Press ⏻ of the handset.

Handset Operation

To make a call when the handset is placed in the holder: Key in the desired number. Lift the handset. To make a call when you hold the handset in your hand: Key in the desired number. Press . To redial the last called number when you hold the handset in your hand: Press twice.

To receive a call: Press any key (except ⏻ or **MENU**) or lift the handset. To end a call: Replace the handset or press .

To switch from handset operation to handsfree (HF) operation:

Press . Replace the handset in the holder.

Handsfree Operation

The car installation kit also offers you the hands-free function (HF). In HF operation mode the *HF* indicator remains in the lower right corner of the display.

To make a call: Key in the desired number. Press . To redial the last called number: Press twice.

To end a call: Press . To receive a call: Press .

To switch from HF operation to handset operation: Lift the handset from the holder.

In addition to the holder and the handset (optional), the basic car installation kit includes a junction box (HFJ-2), a microphone (HFM-3) and a loudspeaker (HFS-1).

DATA ADAPTER (FDP-1)

The FDP-1 is a simple, manually activated data adapter that allows you to connect the phone to a data device such as a fax machine or a computer, and to send and receive data.

TELEADAPTER (FDM-2)

The FDM-2 teleadapter allows you to connect the phone to faxes, modems, and cordless phones, and to send and receive data automatically by using eg. the auto-answer and remote dialling functions.

IGNITION SENSE

The ignition sense function (ignition controlled switch ⏻) allows the phone to be automatically switched on or off whenever the vehicle is started or switched off, respectively.

When the ignition is turned off, the message *AUTO PWR OFF* is displayed, a beep is given and the phone is switched off in 5 seconds. If you press any key or if you take the phone from the holder during this time, the phone will not be switched off. If you turn ignition off while you have a call going on, the phone is switched off 5 seconds after you end the call. Ignition sense is not userselectable. It is always enabled when the ignition sense line is connected.

CAR RADIO MUTE (CRM)

This function mutes the car's radio when a call is started or when the phone rings to indicate an incoming call. When the call or the ringing tone ends, the car radio is unmuted and regains its original volume level. CRM is not userselectable. It is always enabled when the CRM-line is connected.

EXTERNAL ALERT

The phone's ringing signal can be connected to the horn. Note! Using the EXTERNAL ALERT limits the use of the CRM because they are alternative selections.

CHARGERS

Travel Charger (ACH-3EF)

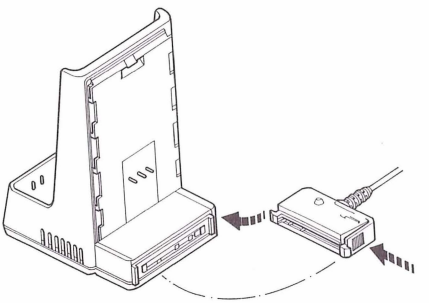
This light weight AC travel charger can be used with all battery options. The charging time for each of the batteries (BBH-6S/BTH-4) is about 10/12 hours.

Fast Travel Charger (ACH-4EF)

This light and small-sized fast AC charger is ideal as a travel charger. The charging time for each of the batteries (BBH-6S/BTH-4) about 60/80 minutes. The charger can also be used in connection with the desktop charger.

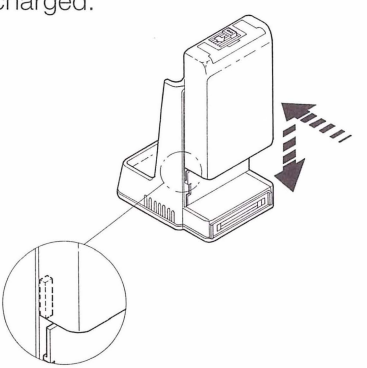
Desktop Charging Stand (CHH-9)

The desktop charging stand makes recharging easier, and allows you to charge both the phone and a spare battery. To use the charging stand, connect the AC fast travel charger (ACH-4EF) to the stand, then plug it into the mains. Place the phone in the charging stand.



Charging time for each of the batteries is about 60/80 minutes.

If an extra battery is fitted into the charging stand, it will be charged after the phone's battery has been fully charged.



The charging stand is provided with a deep discharge switch for the spare battery. Press the switch to start discharging the spare battery. After discharge, the charger will begin to charge the spare battery automatically. This way you will obtain maximum battery life.

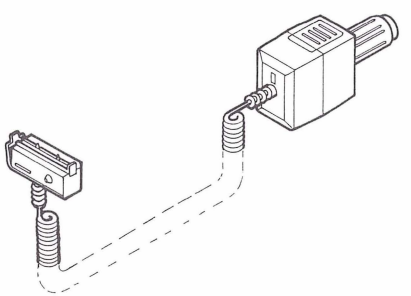
Cigarette Lighter Charger (LCH-1)

You can also charge the battery from your vehicle battery, using the LCH-1 cigarette lighter charger. The charger should be connected to the phone in the same way as the travel charger. You can connect the cigarette lighter charger to the desktop charging stand, too.

During charging, the phone can still be used, even with empty batteries.

Note that the input voltage range is from 10 to 30V DC, negative grounding.

The charging time for each of the batteries is about 60/80 minutes.



Charging Indicators (CHH-9 and LCH-1)

The red charging indicator light on the AC charger is on while charging is taking place. When the battery is charged the green indicator light will come on.

A red indicator on the charger and the scrolling battery bars on the phone's display show that charging is in progress. When the phone's battery is fully charged, the battery indicator on the display will constantly show all bars and the indicator on the charger will be green.

If the indicator is green but the bars on the display are scrolling, the charging is temporarily disabled (eg. battery too hot or cold).

The spare battery in the desktop charging stand is fully charged when the green indicator is on.

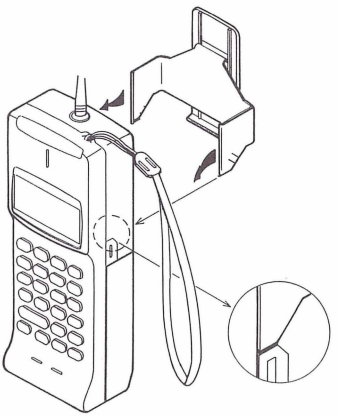
BATTERIES

Standard 800 mAh NiCd Battery BBH-6S
Extended 1000 mAh NiMH Battery BTH-4
This high capasity battery pack is also environmentally friendly because it contains no cadmium.

BELT CLIP

You can attach your handportable for example onto a belt when using a belt clip. This way the phone is easier to carry along.

Slide the belt clip onto the phone with care.



FIELD ANTENNA

If the cellular signal is poor you can use a longer antenna to improve reception.

6. APPENDIX

LIST OF KEYS

(More detailed information on each key is given throughout the manual.)

⏻ Press and hold to switch the phone on or off.

ABC Press to switch to alpha mode and key in or display letters; press again to switch back to numeric mode.

MENU Used to enter menus.

C Used to delete characters and cancel keystrokes.

R Used to recall information from a memory location. Also used to show hidden digits, if the display is full. Used for Register Recall (NMT system feature) during a call. (If you need to recall from memory during a call press **MENU R**.)

M Used to store information in a memory location. Also used to confirm a setting for a menu function.

← / ▽ /+
→ / △ /-

Press to scroll through the memory locations. (If you hold the key down, the scrolling will automatically continue.)

After pressing **MENU**, press to scroll through the menu, and to select options. (If you hold the key down, the scrolling will automatically continue.)
Used to control the volume during a call.

Used to call a number.
Used to end a call.

Used to make and end handsfree calls.

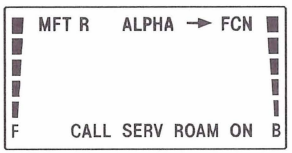
MUTE Used to mute a microphone (during a private conversation)
(Not available in handsfree HSE-1)

LOCK Used to lock the phone and to activate the keyguard by pressing **MENU LOCK** (or **MENU** ✱). (Not available in handsfree HSE-1).

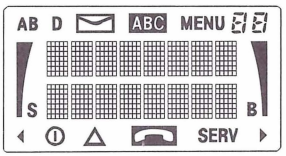
0 - 9 , ✱, #
Number and alpha keys.

LIST OF DISPLAY INDICATORS

Phone



Handset



ON/ ⏻

On indicator. Comes on when you switch the phone on with ⏻.

ROAM/ △

Roam indicator. Comes on when your NMT center cannot transmit calls to your phone. Press 📞 to re-register the phone on to the system, or try to make a call.

SERV/SERV

Service indicator. Indicates that you are in a cellular service area.

CALL/ 📞

Call indicator. Will flash when there is an incoming call to your phone. Stays on if the call is not answered. Is on during a phone call.

FCN/MENU

Function indicator. Comes on when you press the **MENU** key to activate the functions.

ALPHA/ABC

Shows that the phone is in alpha mode and letters can be keyed in or displayed.

→ / >

Call Forwarding indicator. When this symbol is displayed it indicates that your incoming calls are being transfered to another number (NMT system service).

MFT/D

Multifrequency tone indicator. When on it indicates that numerical information can be sent for communication purposes. When flashing it indicates that numerical information is being sent.

F/S

Field strength indicator. Five dashes indicate that the cellular signal to your phone is good.

B/B

Battery charge indicator. Five dashes indicate a full battery. One or two dashes indicate that the battery is almost empty.

LIST OF DISPLAY MESSAGES

AUTO PWR OFF

Ignition sense is enabled -the phone will be switched off in 5 seconds.

BATTERY LOW

Appears when battery charge is down to 10%, then every 5 minutes if the phone is on standby; every minute if it is in use.

CALL ENDED

The cellular signal is too weak or the network is busy and your call is cut off (appears only if the tones have been switched off).

CODE ERROR

You keyed in a wrong lock code or security code.

DATA ACTIVE

The phone is in data mode.

EMPTY

You tried to recall information from an empty memory location.

INVALID NUMBER

The number to which you wish to add an international prefix is too long or contains invalid characters.

KEYGUARD ACTIVE

The keyguard feature is turned on.

KEYGUARD OFF

The keyguard feature is turned off.

LOCK CODE?

Prompts you to enter the lock code.

LOCKED

The phone is locked.

NEW LOCK CODE?

Prompts you to key in the new lock code.

NO CALL ACTIVE

Data mode cannot be used because you have no call going on.

NONE PRESENT

There are no accessories connected to your phone.

NO SPACE

All memory locations are full. Clear a memory location if necessary.

NOT ALLOWED

You tried to store a number in an illegal memory location (e.g. 98).

NOT FOUND

The name you tried to recall does not exist.

PREFIX

Prompts you to key in the memory location number where the international prefix (to your home country) is stored.

*PRESS MENU **

You pressed a key while keyguard was on - press **MENU** ✱ or **MENU LOCK** to unlock the keypad.

RECALL

Prompts you to enter the required memory location number, when wishing to recall information from memory.

RECHARGE BATTERY

Appears 10 seconds before the phone switches off and all operation ceases.

REPLACE CONTENT?

The memory location where you tried to store information is already in use.

REPLACE NAME?

Asks you if you want to replace the previously stored name.

SECURITY ?

Prompts you to enter the security code.

SLNT

The ringing tone volume is turned off to SILENT SERVICE mode.

MUTE

The microphone is muted

UNMUTED

The microphone is unmuted.

STORE

Prompts you to enter the desired memory location number when storing information in memory.

STORE NOT DONE

Indicates that you chose not to store new information in a memory location that was already used.

STORED

Storage in memory was successful.

TIMERS CLEARED

The call timers have been set to zero.

UNLOCKED

The phone has been unlocked.

USE < >TO VIEW

Indicates that you have entered the menu. Press ← or → to scroll the functions.

VOLUME 1

Indicates the current volumelevel of the earpiece.

LIST OF TONES

Ringing Tone

The ringing tone sounds when there is an incoming call. The tone shown above is the standard tone. The optional tones sound slightly different.

Key Tones

These sound each time you press a key. You can turn the keypad tones on or off.

Call Termination Tone

This sounds if the network is busy, or terminates a call for any reason.

Low Battery Tone

Sounds every 5 minutes (or every minute when the phone is in use) to indicate that the battery is low. The message *BATTERY LOW* is displayed at the same time.

Recharge Battery Tone

This sounds when the battery is extremely low and will no longer operate the phone. The message *RECHARGE BATTERY* is displayed at the same time. The phone will turn off within 10 seconds.

Error Tone

Indicates that you are out of the network's service. In car kit equipped with ignition sense: your phone will be automatically switched off in 5 seconds.

CARE AND MAINTENANCE

Your phone is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you enjoy this product for many years.

Keep it dry. If water should get on it, wipe it off. Water contains minerals that can corrode electronic circuits.

Do not store it in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.

Do not drop it. This might cause permanent damage. The internal circuit boards can be broken.

Do not use or store it in dusty, dirty areas. This will cause permanent wear of moving parts.

Do not use harsh chemicals, cleaning solvents, or strong detergents to clean it. Wipe it with a soft cloth dampened in a mild soap-and-water solution. If the unit is not working properly, take it to your nearest authorised dealer. The personnel there will assist you, and, if necessary, arrange for service.

TROUBLESHOOTING

If the power does not come on or stay on: Make sure the battery is installed in the phone properly.

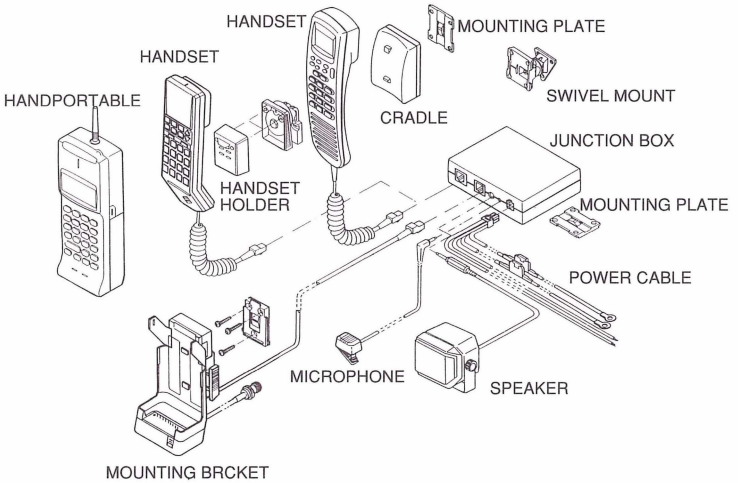
Be sure the contacts are clean on the battery and the charging stand.

Battery charge may be too low for operation. Listen for the low battery warning tones.

If the power comes on, but the phone does not work: Check the *MFT* and *SERV* indicators, you might be out of the cellular service range.

Make sure that the antenna is properly installed and extended to its full length.

Configuration Including Accessories



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